

## **DASCH VARIABLES IN THE KEPLER FIELD**

Jonathan Grindlay

Smithsonian Institution/Smithsonian Astrophysical Observatory

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The Digital Access to a Sky Century at Harvard (DASCH) project has begun to digitize and analyze the scientific data contained in over half a million Harvard plates from the 1880s to the 1980s. Here we propose to obtain Kepler light curves for three classes of variable stars we have discovered in our analysis of 2000 digitized DASCH images with at least partial coverage of the Kepler field. The first class are 5 K giants which showed  $\sim 1$  mag changes on timescales of 10-50 years. Our initial discovery (Tang et al. 2010) of 3 such variables near M44, all K2III, has now been expanded to 20 which show  $\sim 1$  mag changes on timescales from 10 to 100 yrs. Their light curves do not match known types of variable stars, or any models for red giants, and their nature remains mysterious. Kepler light curves will allow us to study the short-term variability of the 5 stars included on the Kepler CCDs and measure their star spot activities and rotations. Using the tools of asteroseismology, the stellar parameters will also be estimated. The second group of variables we propose to monitor are 4 other long-term variables. The third group are 3 Chandra X-ray sources with positional matches to KIC stars which showed variability in their 100y DASCH light curves, 3 CVs and 6 flare variables bluer than K type found in DASCH.